DOCUMENT RESUME

ED 144 566 IR 005 163

AUTHOR Cohen, Kathleen
TITLE Audio-Tutorial in Art History.
INSTITUTION California State Univ. and Colleges, Los Angeles.
PUB DATE 76
NOTE 48p.

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Art; Art Appreciation; *Art Education; Autoinstructional Methods; *Autoinstructional Programs; Higher Education; History; *Instructional Media; *Programed Instruction; Teaching Methods
IDENTIFIERS *Art History

ABSTRACT

An audio-tutorial approach for an art history course taught at San Jose State College in the fall semester 1973 is evaluated by the Project Director and by an Evaluation Consultant. The teaching method combines several techniques: a weekly film presentation, filmstrips and audio tapes to be used in individual audio-tutorial sessions, a study guide containing slide lists and work sheets for each filmstrip unit, coordinated reading assignments, and weekly discussion groups. The Project Director's report summarizes the advantages and disadvantages of the method, evaluates questionnaires and comments from the students, and provides data such as time and material required to develop the program and recommendations for further use of the method. The purpose of the Consultant's evaluation was to study three questions: (1) Are student attitudes about the instructional methods, participation in discussion, and time spent related to final exam scores? (2) Are student grade point averages related to attitudes about methods, attendance, exam scores, and total points earned? (3) Do students in the course achieve differently on the final exam than students taught by other methods? The Consultant's methods and procedures, findings, summary, and sample questionnaire are included. (Author/JAB)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED144566

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

AUDIO - TUTORIAL IN ART HISTORY

PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY

Kathleen Cohen

TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER

Kathleen Cohen
Professor of Art
San Jose State University

IR005 163

This monograph is one in a series describing the results of projects implemented under The California State University and Colleges Fund for Innovation in the Instructional Process

© 1976 Trustees of The California State University and Colleges

AUTHOR'S PREFACE

Several years ago I began work on a new approach to the teaching of the standard introductory course in Art History. My motives for developing the course materials were mixed, and the results were much more successful than I had anticipated. My original game plan had as its aim the procurement of Kenneth Clark's Civilisation film series for our university. After learning that the series cost over $7,000.00 and our entire university audio-visual film budget was under $5,000.00, I began to search for external funding. The opportunity came by means of a fund for innovative teaching established by The California State University and Colleges system. I knew that a proposal to purchase the films for use in a standard art history class would not be considered particularly innovative, so I decided to link that request with something a bit more novel: the use of film strips, tapes, study guide, coordinated reading assignments and small discussion groups to replace the standard lecture format. Being, like most art historians, somewhat suspicious of machines, I had real doubts that the scheme would work.

In addition to the rather cynical motive of procuring the Civilisation series, however, I was interested in seeing if I could solve several other problems and frustrations that I had experienced in the teaching of art history in a large state institution. I have always believed that it was important to give the student the tools necessary to relate to works they have never seen, to get them to react to the works themselves, rather than the labels.

Students need the opportunity to review visual materials; slides go by much too quickly in a standard lecture for effective learning. They also need to involve themselves actively with the material rather than sinking into the gentle lethargy so often inspired by a large class in a warm dark room and the soothing drone of the lecturer's voice.

Needless to say, however, I was more surprised than anyone when it turned out that the segment of the course that the students liked least was the film series, while the great majority of them were quite enthusiastic about the other segments of the course. It is extremely rewarding to me that the audio-tutorial method of teaching art history as we have designed it has proved to be such a successful project.

INTRODUCTION

An introduction to the history of Western art involves a great deal of material, and beginning students are often at a loss in determining what is of primary significance and what is secondary. Often they do not know what the teacher wanted them to learn until it is too late, until the examination is over. An important aspect of the audio-tutorial method is the clear designation of objectives for the course. The materials and the new mode of learning utilized here offer solutions to a number of problems inherent in the traditional lecture-slide presentation of art history to beginning students: problems such as unstated objectives, review of visual materials, and passive memorization rather than active involvement with the materials.

The method introduced in this course combines a number of teaching techniques: a weekly film presentation, filmstrips and audio tapes utilized in individualized audio-tutorial sessions, a study guide which contains slide lists and work sheets for each filmstrip unit, coordinated reading assignments, and weekly discussion groups. The use of detailed work sheets and slide lists is considered by some to be spoon-feeding the students, but the author does not believe this to be the case. By stating clearly the basic material to be learned, the author hoped to allow students to concentrate on learning it, rather than spending their time figuring out what they should learn.

The clear spelling out of objectives enables the students to concentrate their efforts from the beginning on the materials the professor wants to emphasize, while at the same time freeing the instructor to add all the delightful footnotes to history which often capture the imagination of students and make history come alive, but which are not items of major importance. Thus, students are given some idea of the tumultuous forces and counterforces of history and of the conflicting interpretations of various scholars without being thrown into the confusion and occasional despair which can follow the introduction to such a vast field of knowledge.

An extremely important aspect of the course takes the students beyond the learning of facts, and encourages them to apply the facts they learn to new and unknown materials. A good deal of emphasis is placed upon learning to identify and describe stylistic characteristics of the work of particular artists and general periods, and students are asked to use these characteristics to attribute works of art they have not seen before to appropriate artists or periods. This emphasis is based upon the notion that students will see

many works they have never studied as they visit museums and galleries throughout their lives. The course of study outlined here is intended to give them the visual and intellectual tools they need to approach these works with some degree of confidence.

The use of filmstrips and audio tapes plays three important roles in the organization of the course. First, since the instructor no longer must spend time organizing slides and repeating factual information in large lecture groups, he or she can instead devote time to the more personalized and challenging discussion groups or in preparing auxiliary teaching materials. Second, the film strips and tapes answer a long-standing student request to be allowed to review slides presented in the lectures or to make up lectures they have missed. Students may work at their own speeds with the materials, repeating sections as often as is necessary for individual learning rates. Reading assignments may be integrated with the tape sessions, or may be done separately, according to each student's preferred study method.

The weekly films are intended to present another view, both visual and intellectual, of the materials the students are studying. Kenneth Clark's Civilisation film series was selected for several reasons. First, the films present much more accurately than slides can, the sensations of experiencing architecture as an art form; one can walk, with the narrator, through the building, experiencing the transitions and modulations of space. Equally important is the sense of scale which comes from seeing art works in their appropriate settings. Of particular significance is Clark's placing of the art works within a broad cultural setting, for it is vital that students be made aware of the full stream of cultural history, of which the artistic monuments are but a part. The last reason for the selection of the Civilisation films is the strong and often opinionated views expressed by Clark. Although some teachers feel that the clash of interpretations and opinions expressed by Clark is a shortcoming of the series, the authors of the text and the author of the tapes make it clear that the study of art history involves much more than just memorizing artists' names and works of art. Such controversy challenges students to develop their own interpretations and to discuss their own feelings about the works of art they have studied.

By far the most important aspect of the course is the active intellectual engagement of the students with the meaning of what they have learned. The discussion sections serve this important function, for they force the students into confrontation with themselves and each other regarding the significance

and meaning of the materials they have studied. The questions suggested for discussion at the end of each unit are intended as a starting point for each discussion group and hopefully will prevent the sessions from degenerating either into question sessions regarding what will be on the examination - the instructional objectives have already answered those questions - or into apathy.

The following two reports present an evaluation of the effectiveness of the audio-tutorial approach to the teaching of art history, one done by an external evaluator, William Gilmore, and the second done by myself as project director. Both evaluations indicate that the method is a truly effective mode of teaching art history.

A great number of people are to be thanked for making the project a success. First of all, the staff of New Program Development and Evaluation in the Office of the Chancellor, who are responsible for administration of The California State University and Colleges' Program for Innovation which funded the original proposal; then the staff of the Instructional Resource Center at San Jose State University, particularly Jerry Kemp, Ron McBeath, Dick Szumski, and Walt Fox, for providing the technical assistance and general support; and finally, the art history graduate students, who worked so hard to make the course work, most especially Karen Shellhammer, who helped me develop the original adaptation of the audio-tutorial method to art history.

CONTENTS

Author's Preface iii

Introduction v

PART I: PROJECT DIRECTOR'S REPORT

Summary of the advantages and disadvantages of the audio-tutorial method in art history 1

Evaluation of questionnaires and comments 2

Self-pacing and student completion rate 15

Graduate student participation 16

Recommendations 18

Summary of time and materials needed to develop an art history audio-tutorial program 20

PART II: EVALUATOR'S REPORT

Introduction 23

Methods and procedures 24

Results 25

Student comments 37

Summary 37

Appendix 41

I

PROJECT DIRECTOR'S REPORT

ADVANTAGES OF THE AUDIO-TUTORIAL METHOD IN ART HISTORY

- Most students learn more from the audio-tutorial method
- Most students prefer the method for one or more of the following reasons:

  They can learn at their own pace: they can work ahead, or make up missed materials

  They can emphasize the instructional method that best suits their individual approach to learning

  The visual materials can be repeated for study purposes

  The clear designation of objectives helps them study efficiently

  The small discussion groups create active, rather than passive, involvement with the material

- The course provides excellent training for the graduate students who serve as discussion leaders
- The films relate art to its social and cultural context and present art objects in scale
- The materials have interdisciplinary potential

DISADVANTAGES OF THE AUDIO-TUTORIAL METHOD IN ART HISTORY

- Students spend more time studying
- It is difficult to change material
- Equipment failure creates frustration and wastes times
- Some students seem to miss the "lecture mystique"
- There is a loss of direct control by the lecturer, who must depend upon graduate students, and media and equipment technicians
- Cost: the traditional lecture is the cheapest way to present art history to large groups

EVALUATION OF STUDENT QUESTIONNAIRES AND COMMENTS

Three questionnaires were administered to the students participating in art history audio-tutorial during the fall semester of the 1973-1974 academic year (see tables 1-3 beginning page 4). The questionnaires solicited student opinion about various aspects of the audio-tutorial program. Some were intended to evaluate the audio-tutorial approach itself, while others were intended to aid the instructor in improving various elements of the course structure.

In addition to the formal questionnaires, students were asked to add any comments they wished. Most of these comments were positive, reflecting the results of the questionnaires, but as the following quotations indicate, opinions ran the gamut from great enthusiasm to total disenchantment:

> "On the whole, I would judge this course as very effective and worthwhile. I would choose it above a normal lecture course at any time."

> "As you will no doubt figure out by my test scores, I believe this course was a total flop...I hope to repeat this course under a human, not a cassette player."

In all three questionnaires, however, the majority of the students indicated preference for the audio-tutorial method over the traditional approach. After completing the course, 71% of the students preferred the audio-tutorial method despite the fact that 80% of the total group felt that they spent more time on this type of course than a traditional one, and with 48% of them indicating they spent at least twice as much time on the audio-tutorial. The students apparently felt that the time paid off in terms of knowledge acquired, for 71% believed that they had learned more from the audio-tutorial. One student made the following comment: "In comparison to the traditional lecture method, the audio-tutorial method definitely enables the student to retain more," while another student remarked that "the method lets me retain what I learned longer."

Several compared what they had learned by the audio-tutorial method to what they learned in another art history class:

> "I learned much more this way than I did while taking 91A simultaneously the slide-lecture way. But I, of course, was forced to put much more time into the class also."

"I really like this system and got much more information this way. Had 91A the other way and didn't get nearly so much out of it. Takes time - but well worth it."

The students' belief that they had learned more from the audio-tutorial is supported by the objective test data studied by external evaluator William Gilmore which indicated that the students in the audio-tutorial had in fact better test scores than the students taking the course by lecture. Moreover, they scored considerably higher in the correct attribution of slides of work they had never seen before. Students taking the course by the traditional method scored higher, however, in the identification of known works.

This latter highlights a pedagogical shift which I consider to be extremely important, and which was one of my primary teaching goals, i.e., the shift from memorization to analysis and reasoning. Given the vast number of art works that exist, in visiting museums or galleries, there is a low probability that students will see specific works they have studied, while they will undoubtedly see many works that are similar. It is therefore important to give the student the tools necessary to relate to works they have never seen, to get them to react to the works themselves, rather than the labels. It is extremely rewarding that the audio-tutorial method of teaching art history apparently better equips students to do that. It is also encouraging to note that 79% of the students indicate that the course has made them more interested in visiting museums and art galleries.

The students also evaluated the separate components of the course. The various activities integrated into the course - films, filmstrips, and audio tapes, study guide, text, and discussion groups - were intended to offer the student various modes of learning and to mutually reinforce each other. Since much of the same basic material was presented through the various techniques, students could concentrate their energies on the modes that suited them best.

The variety of activities changed one unfortunate, but all-too-common, study technique for the better. As one student remarked, "This course is very efficient and saves cramming for tests." Another appreciated the shift from passive learner to active participant: "The approach made me feel like an active partner in my learning - not just a sponge."

TABLE I

MIDTERM I EVALUATION - NOVEMB , 1973 - N=88

		% *
1.	In comparison to the traditional lecture method, do you feel that in the audio-tutorial method you have learned:	
	a. more content	65
	b. less content	9
	c. about the same amount of content	24
2.	In comparison to the traditional lecture method, do you feel that the material you learned was:	
	a. in greater depth	63
	b. more superficial	16
	c. about the same	20
3.	In the long run, do you believe that the time you spent on the course was:	
	a. more time than by lecture method	77
	b. less time than by lecture method	11
	c. about the same time as the lecture method	11
4.	In comparison to the standard lecture method, do you feel that the variety of means used in the course (film, filmstrips, study guide, and discussion):	
	a. influenced you to have a more positive attitude toward the subject	74
	b. confused you	14
	c. did not make any difference	11
5.	Which aspect of the course did you feel helped you the most?	
	a. films	5
	b. ability to review the slides on the filmstrips	55
	c. study guide	22
	d. text	2
	e. discussion groups	13

		% *
6.	Which, if any, aspect of the course could be eliminated without affecting your learning?	
	a. films	65
	b. filmstrips and tapes	0
	c. study guide	0
	d. text	7
	e. discussion groups	26
7.	How do you feel about the integrating of the various activities of the course (film, filmstrips, study guide, text, and discussion)?	
	a. They were well integrated.	74
	b. They were not well integrated.	14
	c. The degree of integration made no difference to me.	10
8.	How do you feel the audio-tutorial method compares to the lecture method?	
	a. I like the audio-tutorial method better.	78
	b. I like the lecture method better.	17
	c. It doesn't make any difference.	3
9.	How do you feel about the amount of personalization in the course?	
	a. The method offers a more personalized approach than traditional lecture courses.	41
	b. The method is mechanized and depersonalized.	34
	c. A personalized approach is not important to me.	24
10.	If you had your choice in the future, would you take another audio-tutorial course?	
	a. Yes	79
	b. No	16
	c. I am indifferent to the method used in teaching.	4

*These numbers indicate the percentage of students who responded with this answer.

TABLE 2

MIDTERM II EVALUATION - DECEMBER 7, 1973 - N=84

		% *
1.	If 91B were offered in the traditional lecture method, at convenient hours, by Dr. Cohen, and using the same material and exams, but without the filmstrips and workbooks, would you	
	a. prefer audio-tutorial?	60
	b. probably prefer the lecture method?	26
	c. have no preference?	14
2.	If 91B were offered in the traditional lecture method, at convenient hours, by any teacher, yet using the same exams, would you	
	a. prefer audio-tutorial?	68
	b. probably prefer the lecture method?	12
	c. have no preference?	19
3.	Do you feel that your discussion section meeting is:	
	a. stimulating and helpful always?	14
	b. stimulating and helpful sometimes?	44
	c. not stimulating but still helpful?	28
	d. not particularly necessary?	12
	e. a bore, a chore, and a drag?	0
4.	Regarding the discussion questions, do you feel:	
	a. that all of the discussion questions must be covered each time?	9
	b. that as many questions as possible should be covered each time?	61
	c. that one question should be selected and covered in depth?	6
	d. that it really doesn't matter, as long as everyone participates?	12
	e. that it really doesn't matter, period.	10
5.	Regarding the discussion questions for your section meetings, do you feel:	
	a. that the majority is useful, helpful, and sensible?	47
	b. that a great many are difficult and above the level of the course?	9
	c. that most of the discussion questions should probably be rewritten?	9
	d. we could eliminate them all and go over the material in the workbook instead?	25

		% *
e.	that the discussion leaders should give lectures rather than asking us to discuss?	9

6. Regarding the Kenneth Clark films, would you prefer:

a.	to leave the schedule as it is, presuming the films went as scheduled?	32
b.	to have a professor lecture in place of some of the films?	17
c.	to have a professor lecture in place of all of the films?	15
d.	to have several professors lecture in place of the films?	4
e.	to have a combination of films and lectures by several professors?	30

7. Regarding the quality of the filmstrips in the audio-tutorial lab, do you feel:

a.	they are adequate?	59
b.	that there are a few drawbacks, but they do not interfere with learning?	27
c.	that the quality of the filmstrips is a real detriment to the course?	10
d.	that the course should not be offered again unless the filmstrips are redone?	0

8. Regarding the examinations, do you feel:

a.	that they are very fair?	42
b.	that they are reasonably fair?	55
c.	that only the multiple-choice part is fair?	2
d.	that only the essay part is fair?	0
e.	that the tests are completely unfair?	0

9. Do you feel:

a.	one midterm would be sufficient?	4
b.	two midterms are about right?	48
c.	three midterms would be better?	46
d.	a single final examination is sufficent?	0

10. As a result of taking this course, do you think:

a.	you might major in art history?	4
b.	you will want to take more art history courses in upper division?	15
c.	you might take an occasional art history course?	48
d.	you have probably had enough?	28
e.	you are completely turned off and will not take more art history courses?	2

*These numbers indicate the percentage of students who responded with this answer.

TABLE 3

FINAL EVALUATION - JANUARY 1974 - N=86

		% *
1.	I did the assigned reading:	
	a. all of the time	29
	b. most of the time	38
	c. about half the time	17
	d. only occasionally	11
	e. not at all	3
2.	I feel the reading helped me learn the material:	
	a. very effectively	17
	b. moderately effectively	53
	c. undecided	11
	d. very little	14
	e. not at all	2
3.	I used the tapes and filmstrips in the lab in what way?	
	a. I repeated most of them more than once.	33
	b. I studied each one at least once.	52
	c. I did most of the tapes, but not all.	11
	d. I did between quarter and three quarters of the tapes.	1
	e. I did less than one quarter of the tapes.	1
4.	I feel that the tapes and filmstrips helped me learn the material:	
	a. very effectively	56
	b. moderately effectively	37
	c. undecided	3
	d. very little	2
	e. not at all	0
5.	I completed the material on the work sheets:	
	a. all of the time	44
	b. most of the time	34
	c. about half the time	8
	d. less than half of the time	8
	e. not at all	4

		% *
6.	I feel the work sheets helped me learn the material:	
	a. very effectively	23
	b. moderately effectively	51
	c. undecided	18
	d. very little	5
	e. not at all	1
7.	I attended the Civilisation films:	
	a. all of the time	23
	b. most of the time	38
	c. about half the time	16
	d. less than half the time	17
	e. not at all	3
8.	I feel that the films helped me learn the material:	
	a. very effectively	9
	b. moderately effectively	28
	c. undecided	32
	d. very little	25
	e. not at all	3
9.	I attended the discussion sections:	
	a. all the time	30
	b. most of the time	45
	c. about half the time	12
	d. less than half the time	8
	e. not at all	3
10.	I feel that the discussion sections helped me learn the material:	
	a. very effectively	18
	b. moderately effectively	52
	c. undecided	11
	d. very little	13
	e. not at all	3

		% *
11.	The course has influenced me in what way regarding visits to museums and art galleries?	
	a. made me much more interested in visiting them	55
	b. made me somewhat more interested	24
	c. maintained my interest at the same level it was before	17
	d. decreased my interest somewhat	1
	e. made me never want to visit another	1
12.	After completing the audio-tutorial course, I would relate it in which of the following ways to a traditional lecture presentation?	
	a. I much prefer the audio-tutorial	34
	b. I somewhat prefer the audio-tutorial	37
	c. I don't prefer the audio-tutorial	7
	d. I somewhat prefer the traditional lecture presentation	10
	e. I much prefer the traditional lecture presentation	10
13.	Have you taken Art 91A (Prehistoric to Medieval Art) or its equivalent?	
	a. yes	51
	b. no	48
14.	In comparison to the amount of material I learned by the usual lecture method, I believe the audio-tutorial method made me:	
	a. learn much more	46
	b. learn somewhat more	25
	c. learn about the same	17
	d. learn somewhat less	7
	e. learn much less	3
15.	In comparison to a traditional lecture course, I spent what total amount of time on this course?	
	a. at least twice as much time	48
	b. somewhat more time on the audio-tutorial	32
	c. about the same	15
	d. somewhat less time on the audio-tutorial	2
	e. at least half as much time	1

*These numbers indicate the percentate of students who responded with this answer.

Filmstrips and Tapes

The evaluation indicates that 55% of the students considered the ability to review the slides on the filmstrips to have been of greatest benefit to them. The filmstrips fulfill a need long felt by art history students - to be able to study and review at their leisure the works of art that are usually seen only once in a traditional lecture course. Of the students responding 56% felt that the tapes and filmstrips were very effective in teaching them the material, while 37% felt they were moderately effective. Several of the written comments indicate why the students thought the tapes and filmstrips were so effective:

> "Great idea! Great system. Can repeat when and how often you want. Just the important stuff there and in a neat, always available package."
>
> "I feel the audio-tutorial method is great...the tapes and filmstrips are great time savers. Why have an instructor repeat the lesson and lecture every day of the week?"
>
> "I got so much more out of the audio-tutorial setup because I could stop the tape and go back to whatever I wanted to review...True, it took up a lot more time than the lecture setup, but I learned at my own speed..."
>
> "I like being able to use the filmstrips when I can."
>
> "I thought that the slides and tapes were extremely helpful. They expose you to a lot of works, plus they are a really good way to review for a test...." Another student remarked, "I don't as a rule like taped lectures, but I think for this material the tape/filmstrip is useful."

As is apparent from the comments below, however, not all the students liked the tapes and filmstrips:

> "I thought I was registering for a course with Dr. Cohen - not a tape recorder."
>
> "I do not enjoy sitting for hours with uncomfortable headphones on my head, staring at a tiny screen with fuzzy lifeless reproductions of paintings on it."

> "This method was difficult to relate to, and very easy to get turned off to. I became reluctant to go to lab and the films because they bored me with superfluous descriptions and impersonal technique."

Study Guide and Worksheets

The students generally did not view the worksheets as useful as the tapes, although the majority did seem to appreciate them. Twenty-three percent rated them as very effective, while 51% rated them as moderately effective. Only 5% felt they were very little help, and 1% said they were no help at all. One student particularly appreciated the study guide and commented as follows:

> "The study guide was helpful since questions forced one to write down his thoughts and interact with the tapes. It also served as a great study guide when not looking at the slides."

Discussion Groups

Each weekly discussion group is conducted by a graduate student in art history, who leads the students into active participation with the works of art by means of a short ungraded quiz and stylistic analysis of various works of art. The course instructor alternates between groups, a procedure which enables all students to meet with the professor and provides the contact that the questionnaires indicate the students desire.

The groups were viewed by the students as an important segment of the course. Although attendance was not required, 75% of them attended all or most of the time. Twelve percent attended about half the time, with 8% less than half, and only 3% not attending at all. It is most likely this same 3% who said that the discussion sections had not helped them at all, while 70% felt they were either very effective or moderately effective. Several students attended more than one section per week. Most of the written comments were favorable: "I enjoyed the discussion tremendously," "The discussion groups were especially helpful," with one student commenting that "the discussion group keeps the program personal."

Film Series and Reading Assignments

The Clark Civilisation film series was the least valued part of the course. One student commented, "I was pleased with everything except the films." Another indicated one of the reasons for the negative evaluation: "The films I did

not care for. What's-his-face has too much of an accent." One student, however, wrote "The film is great." 65% of the students responded that the films were an aspect of the course that could be eliminated without their learning being affected. Although 61% indicated that they attended the films all or most of the time, only 37% felt that the films had helped them learn the material very effectively or moderately effectively. Sixty percent felt that they had helped very little or not at all. By contrast, 70% of the students felt that the reading assignments had been very effective or moderately effective.

Evaluator William Gilmore correlated the test scores in relation to the students' perception of the value of the various segments of the course. In addition to the strong correlation that existed between the students' scores on the objective part of the examinations and the use and appreciation of the tapes and study guides, another existed between the students' use and appreciation of the text and films and the scores these students achieved on the essay segments of the examinations. I wanted students to use the text and the films as enrichment rather than as something that should be memorized, and the essay questions were intended to solicit the more general type of information and the sense of relationships that the students could acquire from the text and film.

The low value most of the students placed on the film series, however, came as a great surprise because, as mentioned above, I originally conceived the entire audio-tutorial project as a means of acquiring the thirteen films of the Kenneth Clark Civilisation series. I was not convinced before I started that the audio-tutorial method would work in art history, and I shared the doubts of many art historians about the substitution of canned lectures for live ones. I undertook the project not as a true believer, but rather in a somewhat skeptical way, believing, however, that if it failed, the department would still have the film series. (I realize that one rarely admits something like this in an official evaluation.) I also originally conceived of the weekly Civilisation films functioning as a turn-on for the taped lectures and filmstrips. It didn't turn out that way, however, for it soon became apparent that the students preferred the tapes as a turn-on for Kenneth Clark. The evaluations indicate that the students would prefer substitutions of lectures for some of the films, a feature which subsequently was incorporated into the class structure during the Spring 1974 semester.

The relatively low evaluation of the films was partially the result of technical problems initially experienced in projecting them. The different student assistants who were scheduled to show them sometimes started late, did not have the sound equipment working, and in one case, even had the film wound backwards. This situation has been remedied by assigning one very able student assistant to show them all. As noted above, many beginning students also had difficulty with Kenneth Clark's English accent and had some difficulty following the rich flow of ideas he introduced. Others, on the other hand, staunchly defended the films and felt that they had gained a great deal from them. These students most often have had a previous introduction to various aspects of Western culture.

I believe that the films can be of benefit even to beginning students because not only do they illustrate the scale of works of art, difficult to illustrate with slides where everything becomes the same size, but also the films give a much greater experience of the shifts and changes of architectural space. In addition, Clark ties the history of art firmly to the history of culture and ideas, while his strong opinions stimulate a good deal of heated controversy, which is an asset to any course.

It is obvious, however, from the evaluation of the films that it is quite possible to do an audio-tutorial course without them. Should other campuses wish to utilize the tapes, filmstrips, and study guides, they could do so without having to purchase the films.

SELF-PACING AND STUDENT COMPLETION RATE

The vast majority of the literature on self-paced courses indicates a high rate of incompletes, probably because the students tend to devote their primary energies to those courses with hard and fast deadlines, leaving the self-paced materials until they have time. Often, unfortunately, this time never comes. However, the flexibility of a self-paced course has many values, for it enables students to work at their own varying rates, to repeat material that might have been missed in a lecture course because of unavoidable absence.

The structure of the art history audio-tutorial seems to incorporate many of the advantages of other self-paced systems while avoiding the disadvantages. The materials are divided into weekly units and at the end of each week a discussion period with quiz is devoted to the material presented in the filmstrips for the week. The discussion group schedule tends to encourage the students to complete the materials on time, but each student can devote as little or as much time during the week as is needed for each to comprehend the material. In addition, if a student is ill or absent for some other reason such as travel, the material scheduled for the period missed can be made up at any time. Not only are the filmstrips and audio tapes available at all times, but the film series is available on videotape and will be screened in the Audio-Visual Department at the student's request.

One student commented that she had been sick and unable to attend class for an extended period, but had been able to make up the work. "Fortunately, the way this course has been structured, I was able to cover most of the material, and for this I was grateful. Otherwise I would have had to drop it."

Only one student out of 89 received an incomplete in the audio-tutorial program during the semester evaluated, a ratio which compares favorably to the incomplete rate for regular lecture courses. The evidence seems to indicate that while the audio-tutorial in art history gives the flexibility inherent in self-paced programs, its structure tends to motivate students to progress at a satisfactory rate and thereby avoids some of the pitfalls inherent in so many of them.

GRADUATE STUDENT PARTICIPATION

An unexpected aspect of the audio-tutorial format used for this course was the benefit to the graduate art history students who participated in the project as discussion leaders. The original proposal contained funds to pay the discussion leaders who also helped with the preparation of the materials. A second-year renewal grant was awarded with the provision that the University would assume the costs of the program should the innovations prove successful. As department chairman, I was well aware of the precarious nature of funding, particularly for graduate assistants, and I realized that if the project were to continue, some means other than money would have to be used to insure participation of graduate students.

Other institutions had granted academic credit for tutorial assistance to less advanced students with the pedagogical justification that one learns most effectively when one must explain material to another. An important element of our art history graduate program is a comprehensive examination testing the candidate's grasp of the entire history of Western art. Since the audio-tutorial project dealt with half of this material, it seemed appropriate to inquire as to whether graduate students preparing for the comprehenisve examination might be interested in participating in the project in exchange for three units of academic credit, which is ordinarily assigned for special study in preparation for the graduate comprehensive examination. A number of them were interested, and of the graduate students who participated in the audio-tutorial project, those who were preparing for comprehensives felt they received the greatest benefit.

In order to insure that the participating was truly a learning experience for the graduate students, as well as an adequate instructional level for the undergraduates, a weekly seminar was set up at which the participating graduate students and faculty members went over the material to be discussed at the course section meetings. In addition to these discussions, the graduate students were involved in constructing the course examinations, an activity which many of them felt to be the most valuable part of the entire experience. As a group, we discussed why each question submitted was a good one, or needed improvement. I have observed that many instructors write ambiguous questions without being aware of it, and through our analysis the graduate students became aware of possible ambiguity. They also discussed and debated just what was most important and why it should be tested.

A major problem in any course is deciding what is most significant, and the structured audio-tutorial makes this problem even more salient. As the graduate students reviewed the tapes in preparation for the weekly meetings, they were quick to point out the material which they felt had not been covered and which should be added to the course. As they worked with their groups of students, they came to feel that perhaps too much material was included for all the students to fully grasp. When I requested suggestions as to how I should revise the tapes, they responded with a full discussion of the problem of selection, the recognition that for everything added, something must be eliminated. Through such discussion we gradually arrived at a consensus of what was most vital to include in a beginning survey of art history. Since most of the graduate art historians will teach such a survey when they begin their own careers, the experiences in the audio-tutorial - from class discussion through exam writing to selection of course content - will make them think more deeply about the pedagogical questions implicit in their chosen discipline.

In addition, many of them have become converts to the audio-tutorial method itself, having seen that the combination of carefully constructed materials and discussion groups offers the students a better mode of learning than the traditional lecture method. I suspect that the audio-tutorial method has a better chance of spreading through the efforts of instructors who learned about it while still graduate students than through attempted conversion of instructors who already have developed their lectures and feel comfortable with the lecture method. It is an interesting sidelight that two of the graduate leaders were students in the first undergraduate class to use the audio-tutorial technique, and it was that experience which led one of these students to decide to major in art history.

RECOMMENDATIONS

Development of Audio-Tutorial For 91A

The generally high evaluation of the 91B audio-tutorial by the students and the evidence Mr. Gilmore presents of their higher achievement leads to the conclusion that the companion course, Art 91A, should also be developed on the audio-tutorial format. Several students have inquired when this would be done, and stated that they firmly believed it should be done as soon as possible.

The evaluation of the film series indicates that while many students appreciated them, the majority felt that they would prefer some combination of films and lectures. Thus the 91A course, which deals with the history of art from pre-historic times to the end of the Middle Ages, could be developed at a much reduced cost. The two segments of the Clark series that deal with the Middle Ages will be used, as well as several other films we already have on the art of Egypt, Greece, and Rome, but there is no need to purchase films for every week. Special lectures can be given instead.

Use of the Materials for Concurrent Enrollment

Although the course is lower division, I believe it should be made available for concurrent enrollment. It is quite unlike anything offered by the community colleges, and it can provide a special service to the community which should be recognized. The course would be most effective if offered as part of the increasingly popular museum docent programs. Copies of the tapes and filmstrips could be maintained at the museum for use by the docents and other interested museum members. Weekly discussion groups could be held at the museum, but could be part of a regularly scheduled University course, since permission has now been granted to schedule regular classes off campus. Time sequences could easily be adjusted to fit the needs of the community to be served - for example, each unit could be studied for two weeks instead of the usual one.

Dissemination of Course Materials

Since the external evaluation of the audio-tutorial course indicates that students have actually learned more than by the regular method and the questionnaires indicate that most students prefer the audio-tutorial method, it seemed reasonable that the materials could be used profitably at other institutions within the system.

The 1974-75 fund for Innovation provided a small grant for duplication of the software, that is, the filmstrips and audio tapes for use by two campuses: Dominguez Hills and Pomona. Each of these campuses provided their own hardware (filmstrip viewers and tape recorders) and students purchased the study guides.

For other institutions which are interested in setting up similar courses, the following indicates the estimated costs for the various materials needed to serve a group of 120 students. It is not necessary to purchase the Clark Civilisation films since the other materials were designed to be used either in conjunction with it or separately.

In addition to the materials listed, the institution would have to provide access to two 33mm clide projectors for use in the discussion sections, and a room with tables, chairs, and electric outlets that can serve as the laboratory. As noted, some individual would have to be available approximately 30 hours per week to check out the materials to the students. This activity could take place in a library, an audio-visual learning center, or within the art department.

It is recommended that four art history students be used to lead the discussion groups, which should be limited to 15 students each. Each graduate student could lead two groups. Of course, regular faculty members could lead the groups if they so chose.

SUMMARY OF TIME AND MATERIALS NEEDED
TO DEVELOP AND MAINTAIN AN AUDIO-TUTORIAL PROGRAM
IN ART HISTORY

DEVELOPMENTAL STAFF NEEDS

Faculty release time - at least half time for one semester or one quarter time for two semesters, plus one quarter time for one semester for revisions.

Instructional Development personnel - course and facilities planning, implementation and evaluation, one quarter time for one semester.

Audio visual technicians to make filmstrips and tapes, half time for one semester.

Typist for study guide - at least full time for one semester.

REPLICATION COSTS*

Materials for one student station:

Software:	Filmstrips and tapes - 13 units of 2 strips each and one tape @ $8.00 per unit	$104.00	
	3 review filmstrips	6.00	
	Cost per student station	$110.00	
Hardware:	Viewlex filmstrip viewer	$ 50.00	
	tape recorder and earphones	40.00	
	Cost per student station	$ 90.00	
Total cost per student station			$200.00
12 student stations recommended for a class of 120 students:			
Software		$1,300.00	
Hardware		1,080.00	
Total			$2,380.00
Civilisation film series, if desired:			$7,350.00

*Allowance should be made for rising costs.

STAFFING COSTS*

Lab: Student assistant time to staff laboratory @ $2.00 per hour for 30 hours per week for 15 weeks for one semester; $900.00

Discussion Sections: 4 graduate students receiving special studies credit
Faculty coordination and supervision: course assignment

*Allowance should be made for rising costs.

II

EVALUATION REPORT

William Gilmore
Evaluation Consultant

INTRODUCTION

This report presents the evaluation results of a course titled Art History 91B, taught during the 1973-74 fall semester at San Jose State University. The purpose of the evaluation was to look at the following three questions:

1. Are student attitudes about the course instructional methods, student participation in discussions and hours spent in the Audio Tutorial Laboratory related to final examination scores?

2. Are student grade point averages related to attitudes about the course instructional methods, discussion attendance, Audio Tutorial Laboratory attendance, examination scores and total points earned?

3. Do students in the audio tutorial course achieve differently on the final examination than students who have previously taken Art History taught in a semi-audio tutorial method or students who have previously taken Art History taught by traditional lecture methods?

This report will not attempt to describe the developmental activities associated with the Art History audio tutorial methods. However, certain key elements must be mentioned in order that the reader be able to understand the evaluation design.

The Art History audio tutorial course provides five instructional methods by which students can learn. These methods include filmstrips and tape recordings, a textbook, worksheets, small group discussions, and a 16mm film series. An Audio Tutorial Laboratory was available in the Art Building for students to use the filmstrips and tape recordings associated with each instructional unit. Additional copies of the filmstrip-tapes were available in the Audio Tutorial Center on campus. Students could use the filmstrip-tapes as many times as they felt the need to. Textbook reading assignments and worksheets were assigned for each instructional

unit. Small group discussion sections met once a week and nine of the Kenneth Clark films were shown during the semester.

METHODS AND PROCEDURES

A. Data Collection

Objective test scores and attitude responses were taken directly from the mark-sense answer cards used in class. This testing data includes two midterm and a final examination for the fall 1973 class and the final examination cards for the fall and spring 1972-73 classes. The essay examination scores for the midterms and final and the total points earned were taken from the course grade book.

The number of discussions a student attended was taken from the discussion section role sheets to give an index describing discussion attendance.

The number of hours a student spent in the Audio Tutorial Laboratory was calculated from the sign in and sign out times. Laboratory hours were summed up to the first midterm, from the first midterm to the second midterm, and from the second midterm to the final. The total hours for the semester were also calculated.

Grade point averages were obtained from the office of the registrar. Although names had to be used to match a student's GPA with the rest of his data, no analysis was done that would identify individual students.

A listing of the variables used in this report and descriptions where necessary appear in Appendix A.

B. Sample

Cases from the 1973 fall semester class were included in the analysis only if both midterm examinations and the final examination mark-sense answer cards were available. Data from 83 students were used for the analysis. Two cases from the 1972 fall semester and three cases from the 1973 spring semester were not used because of mechanical problems with the mark-sense reader punch. Seventy and 59 cases from the 1972-73 fall and spring semesters were used for the analysis.

C. Data Analysis

All evaluations were processed at the Stanford Center for Information Processing on an IBM 360/67 computer system. Correlation coefficients, T-tests and analysis of variance were computed with the Statistical Package for the Social Sciences. A computer program to correct criterion referenced tests was used to prepare the data for the analysis of the final examination scores from three Art History classes. The criterion referenced test correcting program was developed by the author.

Variables 1 to 10 are the attitude questions on the final examination. These variables, except for var 8, were scored on a 1 to 5 scale corresponding to the a to e responses.

The value 1 or a was the positive response and 5 or e was the negative response. Variable 8 was scored on a 1 to 4 scale due to the c response "undecided" being omitted. This change in scales will not seriously affect the interpretation of variable 8 correlation coefficients. An adjusted score will be used when comparing variable 1 to 10 mean scores.

RESULTS

A. Instructional Methods

Table 1 shows the correlation coefficients between variables 1 to 10, instructional methods, and the essay and objective final examination scores. There are two questions related to each instructional method. The first question asks the student "how much" or "how often" did he use the method (variables 1,3,5,7, and 9) and the second question asks "how effective" was the method in helping him learn (variables 2,4,6,8, and 10).

The essay final scores showed statistically significant correlations with variable 1, reading quantity, (r=.2146) and variable 7, film attendance, (r=.2875). The objective final scores showed statistically significant correlations with variable 3, filmstrip tape use, (r=.3529) and variable 5, worksheet use, (r=.2319). In each case the significant correlations are with the quantitative variables. This would indicate those students who rated themselves high on the use of the textbook, filmstrip tapes, worksheets, and film attendance actually achieved high scores on the essay or objective final examination.

The mean scores and standard deviations for variables 1 to 10 provide additional information on which to evaluate the five instructional methods. Variables 1 to 10 shown in Table 2 are separated into two groups - the quantitative variables and the qualitative variables. The variables are listed in rank order according to the mean score. The variable with the lowest mean (the positive response) is listed first. The data clearly indicates that students felt they completed more filmstrip tapes and worksheets than film attendance or textbook assignments. They also felt that the filmstrip tapes were of the most value and the worksheets the second most valuable. The film series is rated the least valuable and the textbook assignments and discussions about in the middle.

TABLE 1

CORRELATION COEFFICIENTS BETWEEN INSTRUCTIONAL METHOD VARIABLES AND ESSAY AND OBJECTIVE FINAL EXAMINATION SCORES

VARIABLE NUMBER	VARIABLE NAME	ESSAY FINAL	OBJECTIVE FINAL
1	Reading amount	.2146*	.2042
2	Reading benefit	.1432	.0326
3	Filmstrip-tape use	.1630	.3529**
4	Filmstrip tape benefit	.0740	.1829
5	Worksheet completion	.1354	.2319*
6	Worksheet benefit	.0659	.0662
7	Film attendance	.2875*	.1862
8	Film benefit	.1076	.0203
9	Discussion attendance	.1532	.1874
10	Discussion benefit	.0610	.0766

*Correlation coefficient is significant at the .05 level.
**Correlation coefficient is significant at the .01 level.

TABLE 2

INSTRUCTIONAL METHOD VARIABLES
MEAN SCORES AND STANDARD DEVIATIONS

VARIABLE NUMBER	VARIABLE NAME	MEAN SCORE	STANDARD DEVIATION
	Quantitative variables		
3	Filmstrip tape use	1.83	.76
5	Worksheet completion	1.96	1.15
9	Discussion attendance	2.06	1.03
1	Reading amount	2.22	1.08
7	Film attendance	2.38	1.15
	Qualitative variables		
4	Filmstrip tape benefit	1.52	.69
6	Worksheet benefit	2.12	.87
2	Reading benefit	2.26	1.01
10	Discussion benefit	2.28	1.05
8	Film benefit	3.58*	--

*This value was adjusted to correspond to a 5 point scale for comparison with the other scores.

Table 3 (page 29) shows the correlation coefficients between the quantitative and qualitative instructional method variables. All five correlations are statistically significant and indicate a fairly strong relationship between each pair of variables. This indicates that the more a particular method was used the more it was perceived to be of value. A comparison of the filmstrip tapes correlation (r=.3086) and the worksheet correlation (r=.5316) indicates that students did not perceive an increased value with an increased use of the filmstrip tapes as much as they did with the worksheets.

The data shown in Table 1 also indicates that there was no relationship between student perception of the instructional method value and actual final examination scores. It would seem that some of the methods, especially the filmstrip tapes, contributed to higher test scores but students did not perceive their value.

Total number of student hours spent working with the filmstrip tapes was calculated from the Audio Tutorial Laboratory sign-in and sign-out sheets. The hours were accumulated for each of the three examination periods. A total was also calculated. Table 4 (page 29) shows the correlation coefficients between laboratory hours and scores for each examination.

The first midterm scores (both essay and objective) are not significantly correlated with Hours #1, the time spent in the laboratory up to the first midterm. The second midterm objective scores are significantly correlated with Hours #2, the time spent in the laboratory between the first and second midterm ($r=.3598$). The essay scores are not significantly correlated with Hours #2. The final examination objective scores are significantly correlated with Hours #3, the time spent in the laboratory between the second midterm and the final ($r=.3446$) and the total hours spent in the laboratory ($r=.3511$). Again, the essay part of the examination was not correlated with time spent in the Audio Tutorial Laboratory.

Table 5 (page 30) shows the relationships between the number of hours spent in the Audio Tutorial Laboratory for each of the three examination periods. The high correlation values indicate when students spent many hours in the laboratory studying for the first midterm they also spent many hours studying for the second midterm and the final examination. If a student spent a small number of hours studying for the first midterm he continued to do the same for the second midterm and the final. The mean number of hours spent in the Audio Tutorial Laboratory during each examination period, mean total hours and standard deviations are listed below.

	MEAN	STANDARD DEVIATION
Hours #1	4.5 Hours	3.5
Hours #2	5.4 Hours	4.1
Hours #3	4.4 Hours	4.2
Total	14.3 Hours	10.8

TABLE 3

CORRELATION COEFFICIENTS BETWEEN EACH PAIR OF INSTRUCTIONAL METHOD VARIABLES

VARIABLE NUMBER	VARIABLE NAME	CORRELATION COEFFICIENT
1	Reading amount	
2	Reading benefit	.4336**
3	Film strip tape use	
4	Film strip tape benefit	.3086**
5	Worksheet completion	
6	Worksheet benefit	.5316**
7	Film attendance	
8	Film benefit	.3319**
9	Discussion attendance	
10	Discussion benefit	.4695**

**Significant at the .01 level.

TABLE 4

MIDTERM I, MIDTERM II AND FINAL EXAMINATION ESSAY AND OBJECTIVE SCORES CORRELATION WITH TIME SPENT IN THE AUDIO TUTORIAL LABORATORY

	Hours #1	Hours #2	Hours #3	Total
Midterm I Essay	.1856			
Midterm I Objective	.0974			
Midterm II Essay		.0856		
Midterm II Objective		.3598**		
Final Essay			.0810	.0688
Final Objective			.3446**	.3511**

**Significant at the .01 level.

TABLE 5

INTERCORRELATIONS BETWEEN THE THREE LABORATORY HOURS VARIABLES

	Hours #1	Hours #2	Hours #3
Hours #1	1.0000	.7600**	.6291**
Hours #2		1.0000	.7643**
Hours #3			1.0000

**Significant at the .01 level.

Actual attendance at discussion sessions correlates .3037 with the essay final and .3209 with the objective final. It is difficult to interpret these correlation coefficients in light of the values given in Table 1 for similar variables. In Table 1 variable 9, the student's perception of how often he attended discussion correlated .1532 and .1874 with the essay and objective final. Inasmuch as variable 9 is an opinion of discussion attendance, it would seem reasonable to assume that actual attendance is a more valid indicator and that the .3209 and .3037 correlation coefficients are a better indication of the relationship between attending discussions and final examination scores.

B. Relationship of Grade Point Average to Examination Scores and Attitudes

The student GPA correlated very strongly with both midterm examinations, the final examination, and the total points earned. No statistically significant correlations occurred between GPA and any of the attitude variables, discussion attendance or Laboratory attendance. Table 6 (page 32) presents the GPA correlations with the above variables.

The correlation coefficient of .7111 between GPA and total points earned indicates that those students who received high grades in the past received high grades in Art History 91B. (Course letter grades were determined

from the total points earned). To further confirm the relationship of GPA to course achievement a T-test was made between the mean total points earned for those students with a GPA above the median for the class and those students with a GPA below the median for the class. The median GPA is 2.85 with a range of 2.04 to 4.00. Fifty one cases were available for the GPA calculations.

The T-test data given below indicates that those students with a GPA above the median for the class had a significantly higher total point score than those students with a GPA below the median for the class.

	N	Mean Total Points Earned	Standard Deviation	T Value	Sig.
Below Median GPA	25	310	50.1	5.48	.001
Above Median GPA	26	374	32.5		

TABLE 6

CORRELATION COEFFICIENTS BETWEEN STUDENT GPA AND EXAMINATION SCORES, ATTITUDE VARIABLES, DISCUSSION ATTENDANCE AND TOTAL LABORATORY ATTENDANCE

VARIABLE NAME	CORRELATION COEFFICIENT
Total points earned	.7111**
Midterm I essay score	.3711**
Midterm I objective score	.5697**
Midterm II essay score	.5081**
Midterm II objective score	.5701**
Final essay score	.6708**
Final objective score	.6562**
Reading amount	.1251
Reading benefit	.0063
Film strip tape use	.2646
Film strip tape benefit	.1829
Worksheet completion	.2113
Worksheet benefit	.0803
Film attendance	.0800
Film benefit	.0318
Discussion attendance	.0870
Discussion benefit	.1956
Actual discussion attendance	.2308
Total laboratory attendance	.0878

**Significant at the .01 level.

C. Final Examination Comparisons

The final examination scores from Art History classes offered in the fall and spring semester of 1972-73 are compared to the fall 1973 class taught by audio tutorial methods. The fall 1972 class was taught by the lecture method and the spring semester class was taught with some audio tutorial methods.

Comparisons are made on groups of questions or subtests pertaining to similar content and the test total. Because the number of questions in each of the three final examinations differed slightly, percent correct scores were used for the analysis.

The questions in subtests 1 and 2 asked the student to identify from unknown 35 mm slides an artist, the style or time period. Subtest 3 questions ask the student to identify the artists from known 35 mm slides and subtest 4 the art style. Subtest 5 consisted of multiple choice questions without 35 mm slides.

The determination of significant differences between the mean percent correct scores for the three classes was done by analysis of variance. A comparison was made for the five subtests and the total. If the analysis of variance showed a significancant difference between the three mean percent correct scores, orthogonal contrasts were used to locate the differences.

Table 7 summarizes the analysis of variance data from the three-class comparison.

In three out of the five subtest and the test total, students in the Audio Tutorial class achieved higher scores than the students in a traditional class or the semi-audio tutorial class. On subtest 3, artist identification, only the comparison of the traditional and semi-audio tutorial classes showed statistically significant differences between the mean percent correct scores. Students in the traditional class scored higher than those in the semi-audio tutorial class. On subtest 4, artist style, only the comparison of the semi-audio tutorial and audio tutorial classes showed statistically significant differences between the mean percent correct scores. Students in the semi-audio tutorial class scored higher than those in the audio tutorial class.

The comparison of final examination scores from three classes indicate that students in the audio tutorial class are achieving at a higher level than students from two other previously taught classes.

TABLE 7

ANALYSIS OF VARIANCE SUMMARY FOR FIVE FINAL EXAMINATION SUBTESTS AND TOTAL SCORE FROM THREE ART HISTORY CLASSES

CLASS	MEAN PERCENT CORRECT	STANDARD DEVIATION	SAMPLE SIZE	NUMBER OF QUESTIONS
Subtest 1 Unknown Slides				
Traditional	51.3	16.2	70	14
Semi-Audio Tutorial	70.8	18.0	59	10
Audio Tutorial	79.0	17.6	84	8

Level of Significance = .001

CONTRASTS	SIGNIFICANCE
1 Traditional x Semi-Audio Tutorial	.058
2 Traditional x Audio Tutorial	.001
3 Semi-Audio Tutorial x Audio Tutorial	.025

Subtest 2 Unknown Slides				
Traditional	61.5	16.9	70	14
Semi-Audio Tutorial	70.6	19.3	59	10
Audio Tutorial	77.8	15.8	84	9

Level of Significance = .001

CONTRASTS	SIGNIFICANCE
1 Traditional x Semi-Audio Tutorial	.003
2 Traditional x Audio Tutorial	.001
3 Semi-Audio Tutorial x Audio Tutorial	.016

TABLE 7 - CONTINUATION
ANALYSIS OF VARIANCE SUMMARY FOR FIVE FINAL EXAMINATION SUBTESTS AND TOTAL SCORE FROM THREE ART HISTORY CLASSES

CLASS	MEAN PERCENT CORRECT	STANDARD DEVIATION	SAMPLE SIZE	NUMBER OF QUESTIONS
Subtest 3 Artist Identification				
Traditional	85.3	13.8	70	15
Semi-Audio Tutorial	76.7	21.3	59	14
Audio Tutorial	81.4	14.5	84	15

Level of Significance - .014

CONTRASTS	SIGNIFICANCE
1 Traditional x Semi-Audio Tutorial	.004
2 Traditional x Audio Tutorial	NS
3 Semi-Audio Tutorial x Audio Tutorial	NS

Subtest 4 Artist Style				
Traditional	67.1	21.5	70	9
Semi-Audio Tutorial	73.2	20.5	59	15
Audio Tutorial	65.0	23.8	84	7

Level of Significance = .085

CONTRASTS	SIGNIFICANCE
1 Traditional x Semi-Audio Tutorial	NS
2 Traditional x Audio Tutorial	NS
3 Semi-Audio Tutorial x Audio Tutorial	.030

TABLE 7 - CONTINUATION
ANALYSIS OF VARIANCE SUMMARY FOR FIVE FINAL EXAMINATION SUBTESTS AND TOTAL SCORE FROM THREE ART HISTORY CLASSES

CLASS	MEAN PERCENT CORRECT	STANDARD DEVIATION	SAMPLE SIZE	NUMBER OF QUESTIONS
Subtest 5 Multiple Choice Without Slides				
Traditional	57.2	22.2	70	15
Semi-Audio Tutorial	68.0	19.0	59	14
Audio Tutorial	77.0	19.2	84	15

Level of Significance = .001

CONTRASTS	SIGNIFICANCE
1 Traditional x Semi-Audio Tutorial	.003
2 Traditional x Audio Tutorial	.001
3 Semi-Audio Tutorial x Audio Tutorial	.010

Total Test Score				
Traditional	67.8	14.2	70	88
Semi-Audio Tutorial	72.5	14.7	59	83
Audio Tutorial	77.9	13.5	84	75

Level of Significance = .001

CONTRASTS	SIGNIFICANCE
1 Traditional x Semi-Audio Tutorial	.058
2 Traditional x Audio Tutorial	.001
3 Semi-Audio Tutorial x Audio Tutorial	.025

STUDENT COMMENTS

Comments were written on midterm and final examination papers. The tone of the comments varied from very positive to very negative. The negative comments centered around three areas; the large amount of work required for the course; dislike for the film series; and the need for more personal contact between students and the instructor.

Sixty to seventy percent of the comments were positive about some aspect of the course. Most of the positive comments indicated a liking of the audio tutorial method. However, many students who liked the audio tutorial method also indicated the three concerns listed above.

The one comment that seemed to appear more than any others was that concerning the lack of personal contact with the course instructors. The following comment summarizes the feelings of many students. "...show only 3 or 4 of the best films and the rest of the time Dr. Cohen should lecture."

SUMMARY

The purpose of this evaluation was to answer three questions pertaining to the teaching and learning in Art History 91B.

> Question 1. Are student attitudes about the course instructional methods, student participation in discussions and hours spent in the Audio Tutorial Laboratory related to final examination scores?

Student opinion concerning completion of reading assignments and film attendance is positively related to final examination essay scores. The quantity of filmstrip tape use and quantity of worksheets completed are also related to the final examination objective scores. The student's perception of the benefit or value of the instructional methods used in the course are not related to either parts of the final examination. However, there are strong relationships between instructional method use and their perceived value. This is especially true for the worksheets and less so for the filmstrip tapes. The more a student indicated he used an instructional method, the greater was its perceived value.

Actual attendance at discussion sessions is related to both the essay and objective final examination scores. Those students who attended more discussions tended to have higher final examination scores.

The actual amount of time spent in the Audio Tutorial Laboratory prior to each examination is not related to either the essay or objective scores for the first midterm. The hours spent in the laboratory prior to the second midterm and the final examination are related to the objective scores. The total number of hours is also related to the final examination objective scores. The essay examination scores are not related to time spent in the laboratory.

Students that spent a lot of time in the Audio Tutorial Laboratory prior to the first midterm continued to do so for the second midterm and the final.

All five instructional method variables appear to be related to either the essay final scores or the objective final scores. The amount of reading assignments completed and film attendance are related to the essay final scores while the filmstrip tape use, completion of worksheets and discussion attendance are related to objective final scores.

Of the five instructional methods the filmstrip tapes are rated of highest value, then the worksheets, reading assignments, discussions and lastly the film series.

> Question 2. Are student grade point averages related to attitudes about the course instructional methods, discussion attendance, Audio Tutorial laboratory attendance, examination scores and total points earned?

Student GPA is not related to attitudes about the course instructional methods, actual discussion session attendance or total time spent in the laboratory. However, a strong relationship exists between GPA and the two midterm and final examination scores and a very strong relationship between GPA and total points earned. Students with a high GPA scored high on the essay and objective final and received a high grade in the course. The converse would also be true.

> Question 3. Do students in the audio tutorial course achieve differently on the final examination than students that have previously taken Art History taught in a semi-audio tutorial method or students that have previously taken Art History taught by traditional lecture methods?

Students do achieve differently in an Art History course taught by audio tutorial methods. The audio tutorial class identified artist, style and time period from unknown 35 mm slides significantly better than the previous two classes.

The audio tutorial class scored equally well on the artist identification questions from known slides as did the other two classes.

The semi-audio tutorial class scored significantly higher on questions dealing with artist style than did the audio tutorial class.

The audio tutorial class scored significantly higher on the multiple choice questions without slides than did the other two classes and the audio tutorial class also scored significantly higher on the test total than the other two classes.

Student comments are generally favorable towards the course and the audio-tutorial methods. There is a strong feeling that the course requires too much work and therefore requires too much time. Students also dislike the film series and feel that Dr. Cohen should do some of the lecturing.

In summary, the Art History audio tutorial course is a positive step toward improving instruction. Students are learning more and generally feel good about the course. Some problems exist but hopefully they can be remedied in the future.

APPENDIX

VARIABLES USED IN EVALUATION REPORT

Var 1. I did the assigned reading:

1. all of the time
2. most of the time
3. about half the time
4. only occasionally
5. not at all

Var 2. I feel the reading helped me learn the material:

1. very effectively
2. moderately effectively
3. undecided
4. very little
5. not at all

Var 3. I used the tapes and filmstrips in the lab in what way?

1. I repeated most of them more than once
2. I studied each one at least once
3. I did most of the tapes, but not all
4. I did between one-quarter and three-quarters of the tapes
5. I did less than one-quarter of the tapes

Var 4. I feel that the tapes and filmstrips helped me learn the material:

1. very effectively
2. moderately effectively
3. undecided
4. very little
5. not at all

Var 5. I completed the material on the work sheets:

1. all of the time
2. most of the time
3. about half of the time
4. less than half of the time
5. not at all

Var 6. I feel that the work sheets helped me learn the material:

1. very effectively
2. moderately effectively
3. undecided
4. very little
5. not at all

Var 7. I attended the Civilisation films:

1. all of the time
2. most of the time
3. about half the time
4. less than half of the time
5. not at all

Var 8. I feel that the films helped me learn the material:

1. very effectively
2. moderately effectively
3. very little
4. not at all

Var 9. I attended the discussion sections:

1. all of the time
2. most of the time
3. about half of the time
4. less than half of the time
5. not at all

Var 10. I feel that the discussion sections helped me learn the material:

1. very effectively
2. moderately effectively
3. undecided
4. very little
5. not at all

Hours #1 The number of hours a student spent in the Audio Tutorial Laboratory prior to the first midterm calculated to the nearest 15 minutes.

Hours #2 The number of hours a student spent in the Audio Tutorial Laboratory prior to the second midterm but not including Hours #1.

Hours #3 The number of hours a student spent in the Audio Tutorial Laboratory prior to the final examination but not including Hours #1 or 2.

Total Hours	The sum of Hours #1, 2, and 3.
Midterm 1 Essay	The student's score on the essay part of the midterm examination.
Midterm 1 Objective	The number of questions answered correctly on the objective part of the midterm exam.
Midterm 2 Essay	Same as above.
Midterm 2 Objective	Same as above.
Final Essay	Same as above.
Final Objective	Same as above.
Total Points Earned	The sum of the number of questions answered correctly on the midterms and the final, the midterm and final essay scores, a museum report score and extra report scores.
Grade Point Average	The student's GPA prior to the 1973-74 fall semester.
Discussion Attendance	The actual number of days a student attended discussion sessions.

Final examination question number

	Fall 1972-73 Class	Spring 1972-73 Class	Fall 1973-74 Class
Subtest 1 Unknown slides	46-59	66-75	56-63
Subtest 2 Unknown slides	60-73	76-85	64-67, 69-75
Subtest 3 Artist ident.	23-37	16,18,20,22, 24,26,28,30, 32,34,36,38, 40,42,44	19-27, 45-50
Subtest 4 Artist style	2,3,6,12,14, 16,18,20,22	19,23,29,31, 33,35,37,39, 41,45,47,49, 53,57,61	18,28,33, 54,68,71, 74
Subtest 5 Multiple choice	74-88	1-15	76-90